

AMENDMENTS TO THE SPECIFICATION

Please amend the specification as published as follows:

On page 1, please replace “INTRODUCTION” before paragraph [0001] with the following:

-- BACKGROUND OF THE INVENTION --**1. Field of the Invention --**

On page 1 before paragraph [0002], please add the following:

-- 2. Description of the related art --

On page 2 before paragraph [0014], please add the following:

-- SUMMARY OF THE INVENTION --

On page 2 after paragraph [0014] and before “Coupling a Single Reservoir to an External Network”, please add the following:

-- BRIEF DESCRIPTION OF THE DRAWINGS

[0015] FIG. 1 illustrates an exemplary system architecture of the present invention.

[0016] FIG. 2 illustrates the balancing process for a single production well and a network pipeline.

[0017] FIG. 3 illustrates a case of a controller coupling two compositional reservoir simulations with N1 and N2 components respectively,

[0018] FIG. 4 depicts the PT diagram corresponding to the composition of Table 1 (the two-parameter Peng-Robinson equation of state is used)

- [0019] FIG. 5 shows the gas production over a period of 2 years.
- [0020] FIG. 6 shows the methane composition and the composition of the pseudo-components HC13 and HC43 over time.
- [0021] FIG. 7 shows a schematic diagram of the network, which couples to the reservoir models at the well tubing heads.
- [0022] FIG. 8 shows the oil, gas and water flow rates in the export line.
- [0023] FIG. 9 shows the oil, gas and water production rates from each of the three reservoirs.
- [0024] FIG. 10 shows the phase plot for the PVT samples used in Reservoir B.
- [0025] FIG. 11 shows the PT diagram corresponding to the model for Reservoir B.
- [0026] FIG. 12 shows the PT diagram corresponding to this model for Reservoir C.
- [0027] FIG. 13 shows a corresponding behavior of the produced fluid composition vs. time for the oil and gas production rates in FIG. 12.
- [0028] FIG. 14 shows the gas injection rate of Reservoir C.
- [0029] FIG. 15 shows the surface volume gas injection rate of Reservoir C.
- [0030] FIG. 16 shows the water injection rate of Reservoirs A and B.
- [0031] FIG. 17 shows the injected gas composition of Reservoir C.

DETAILED DESCRIPTION --